

Jennifer Myers

From: Diane Zalaskus
Sent: Wednesday, September 10, 2014 10:47 AM
To: Terry Pilawski; Jennifer Myers; Eugene Callahan; Linda Ofori
Cc: Karen Fell
Subject: Bordentown Meeting

Fred asked that if we have anything to add to this summary, that we do so before his meeting w/ Mayor Malone. Meeting is in the process of being scheduled.
Guess for now I'll "volunteer" to consolidate any additions anyone has.

From: Diane Zalaskus
Sent: Friday, September 05, 2014 4:34 PM
To: Fred Sickels
Cc: Karen Fell; Eugene Callahan; Terry Pilawski; Jennifer Myers
Subject: FW: Bordentown Water Mon 9/8

Fred – See summary below. If you need additional info we can pull it together first thing Monday morning.

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The USEPA initially adopted Maximum Contaminant Levels (MCLs) for Radionuclides in drinking water in 1976. The existing MCLs, that all community water systems must meet in the water they provide at the point of entry to their distribution systems, were adopted on December 7, 2000. The MCLs are 15 pCi/L (picocuries per liter) for Gross Alpha and 5 pCi/L for Combined Radium 226 & 228. It must also be noted that while the MCLs were established as the compliance point, the Maximum Contaminant Level Goal (level known to be safe) is zero pCi/L for both Gross Alpha and Combined Radium.

It should be noted that New Jersey is the only state in the nation that requires water samples to be analyzed for Gross Alpha within 48 hours of sample collection because the sample may contain radium 224 (an alpha isotope emitter) which has a short half-life of 3.6 days. The USEPA does not require such a short holding time so sample results in other states may indicate compliance when if taken in New Jersey, they would have exceeded the MCL. USEPA acknowledged a potential national concern with radium 224 and the flaw in their analytical procedures in their 2000 rulemaking but decided to take no action at that time.

Since the year 2000, a number of community water systems, including the City of Vineland, Town of Hammonton and others (mostly in central and southern New Jersey) have exceeded either one or both of the radionuclide MCLs. These systems are groundwater systems and the contaminants are naturally occurring within the subsurface formation. Sometimes the well in question was not needed and the corrective action taken was to simply take the source offline. Sometimes a well was drilled into a different aquifer to access water with lower levels of radionuclides. More commonly, the water system installed treatment facilities to reduce the radionuclide levels in the drinking water. Treatment technologies have evolved since 2000 with the use of a adsorption resin in vessels to remove the radionuclides as the treatment method of choice for community water systems since about 2005. The radionuclides adhere to the resin and ultimately after a few years, the resin is trucked away as a low level radioactive waste. There is no need to backwash the filters so therefore concern with any discharge of backwash water either to the local sewage treatment plant or the waters of the state has been eliminated.



Bordentown Water Department was issued a Notice of Non-Compliance in April 2009 for exceeding the Gross Alpha MCL and the Combined Radium 226 & 228 MCL of 5 pCi/L with levels of 23.15 pCi/L and 6.11 pCi/L, respectively. (Levels are based on a running annual average - RAA). Rather than put on treatment, Bordentown chose to attempt to optimize its existing green sand filters that were originally installed for Fe/Mn removal. They replaced the greensand media.

On July 15, 2014 another Notice of Non-Compliance was issued to Bordentown for exceedance of the Gross Alpha MCL. The RAA for the period ending the 2nd quarter of 2014 was 15.71 pCi/L. It is likely they will incur another violation for the 3<sup>rd</sup> quarter of 2014. In order to have a running annual average value for gross alpha below the MCL of 15 pCi/L, the 3rd quarter (July-September) of 2014 result will need to be less than 10.85 pCi/L. Otherwise, they will have to public notice another MCL violation.

At the request of Mayor Joseph Malone (former State Assemblyman), representatives from Water Allocation, Water System Engineering, NJGWS, Southern Enforcement and the Division of Law met with Bordentown officials on August 26, 2014 to discuss treatment options, the possibility of converting test wells (permitted years ago as monitor wells) to production wells, and an Administrative Consent Order. The concept of Bordentown seeking emergency approval to use the test wells as public supply wells was also discussed. However, Mayor Malone objected to declaring an emergency and implementing water conservation measures which are required by regulation under the emergency approval provisions. He also strongly objected to entering into an Administrative Consent Order with a compliance schedule.

Subsequent to the meeting, Bordentown decided to install 3 new public supply wells in lieu of utilizing the test wells. Bordentown has selected this option rather than immediately proceeding with designing and constructing treatment facilities for radionuclides. Bordentown is anticipating that the water from the new wells will have lower radionuclide levels as the wells are to be constructed in a slightly deeper unit. It is unclear at this time whether these new wells will be acceptable on a number of fronts. Concerns about the approval of these wells include their proposed location within the wetlands of Crosswicks Creek, that the proposed wells to be requested in a minor water allocation permit modification do not meet replacement regulatory criteria (new wells are proposed to be deeper than the wells being replaced/backed up and in a different aquifer) and whether or not these wells will have or could develop over time similar radiological issues as they are located in the same area as Bordentown's other public supply wells. Bordentown plans to submit an evaluation of the wellfield and a proposed strategy to move forward with a minor water allocation permit modification request by September 10<sup>th</sup>.

Mayor Malone is seeking expedited approvals on all required permitting, which includes well permitting, water allocation and safe drinking water.

Bordentown is also proceeding with getting quotes on cleaning out their backwash lagoons and removing the spent greensand media from 2009 that was never removed from their water treatment plant site. They expect a bond ordinance of approximately \$350,000 will be needed for this project.

Bordentown was advised to optimize their existing water treatment in the short-term.

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**From:** Fred Sickels  
**Sent:** Friday, September 05, 2014 12:33 PM  
**To:** Karen Fell; Diane Zalaskus  
**Cc:** Natalie Ashwood